

REMARKS

Claims 1-10 are pending. By this amendment, the Title of the application is amended herein to be more descriptive of the invention to which the pending claims are directed. Applicant respectfully submits that no new matter is contained herein.

Specification

The Title of the application is objected to for not being descriptive. Applicant has amended the Title herein to be more clearly indicative of the invention to which the pending claims are directed. Applicant respectfully requests withdrawal of the objection.

Claim Rejections – 35 U.S.C. §103

Claims 1-6 and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,587,620 to Niimi et al. in view of U.S. Patent Application Publication No. 2004/0002313 to Peace et al. (Peace). Claims 7-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi and Peace in view of U.S. Patent No. 4,191,851 to Honma et al. Applicant respectfully traverses both rejections for the following reason(s).

Claim 1 recites a noise eliminator for eliminating noise contained in an input signal, the eliminator including, among other features, ***a holding unit for detecting a period of occurrence of noise contained in the input signal, passing the input signal for output during a period when no noise occurs, and putting the input signal into a hold state for output during the period of occurrence of noise.***

Claim 10 recites a method of eliminating noise contained in an input signal, the method including, among others, the following step of ***a holding step of detecting a period of occurrence of noise contained in the input signal, passing the input***

signal for output during a period when no noise occurs, and putting the input signal into a hold state for output during the period of occurrence of noise.

Applicant respectfully submits that Niimi, Peace and Honma, alone or in any combination thereof, fail to teach or suggest each and every feature recited by Claims 1 and 10 for the following reasons.

With respect to Claim 1, Applicant notes the Office Action admits Niimi fails to teach or suggest a noise eliminator having a holding unit for detecting a period of occurrence of noise contained in an input signal, passing the input signal for output during a period when no noise occurs, and putting the input signal into a hold state for output during the period of noise occurring.

With respect to Claim 10, Applicant notes the Office Action likewise admits that Niimi fails to teach or suggest a holding step of detecting a period occurrence of noise contained in an input signal, passing the input signal for output during a period when no noise occurs, and putting the input signal into a hold state for output during the period or noise occurring.

In an attempt to cure or otherwise address the admitted deficiencies of Niimi, the Office Action applies Peace.

Specifically, the Office Action asserts Peace discloses a sample and hold circuit (7), which releases its currently stored maximum value whenever the zero-crossing sensor (6) indicates a zero crossing [0085].

Based on the above, the Office Action asserts that it would have been obvious to one of ordinary skill in the art to implement the sample and hold circuit disclosed by Peace with the noise elimination circuit disclosed by Niimi in order to hold a sample of

the incoming signal and be able to determine if the signal has significant noise present within the signal to implement the synthesized signal.

The Applicant respectfully disagrees with the assertions made by the Office Action for the following reasons.

With respect to the holding unit and holding step recited by Claims 1 and 10, respectively, Applicant respectfully submits that Peace does not teach or suggest that which is recited by Claims 1 and 10 because Peace teaches an entirely different feature than that which is recited by the claims at issue.

In particular, Applicant notes Peace discloses an audio level control system that is intended to dynamically control the level of an input audio signal (9) to provide an altered, level controlled output signal (10). The level control system includes a frequency band limiter (1), a tapped delay line (3), and a signal level control stage in the form of a multiplier (3). The delay line (2) has a number of taps (4) which effectively sample the amplitude of different positions (in time) of whatever signal is in the delay line (2).

The tapped **values** are passed to a maximum absolute value determining circuit (5) which determines the **maximum absolute value** being tapped (sampled) at any given time. The last tap of the delay line and a tap from the signal output from the delay line are input to a zero-crossing sensor (6) which detects when the signal leaving delay line is zero-crossing. The maximum absolute value circuit (5) passes the **maximum value** of any circuit at any time to a sample and hold circuit (7), which releases its currently stored **maximum value** whenever the zero-crossing sensor (6) indicates a zero-crossing.

The effect of this is that the ***maximum tapped (sampled) signal level (amplitude)*** in the delay line is output from the sample and hold circuit (7) at each zero-crossing but otherwise the output of the sample and hold circuit remains the same between zero-crossings.

The ***level value*** output from the sample and hold circuit (7) is provided to a transfer characteristic shaping unit 8 ***which uses that value to adjust the multiplying factor, i.e. amount of level control, applied to the input signal in the level control stage multiplier (3).***

In use, the input audio signal (9) which has a wide dynamic range is first bandlimited by being passed through the bandlimiter (1) and is then input to the tapped audio delay line (2). The zero-crossing sensor (6) detects each zero-crossing of the delay line output waveform and at those points the absolute value of the peak audio amplitude of the signal in the delay line (2) is calculated and stored by means of the maximum absolute value circuit (5) and the sample and hold circuit (7). This maximum absolute value is derived from the taps to the delay line (2) which effectively sample the audio signal still in the delay line.

The maximum absolute value provided by the sample and hold circuit (7) is effectively a prediction of the amplitude of the signal that will be reaching the signal level control stage multiplier (3) from the delay line (2) at some point in the future.

See paragraphs [0086-0088] of Peace.

Applicant respectfully submits that Peace discloses a sample and hold circuit (7) that outputs a maximum value or amplitude that is used to adjust an input signal. The

sample and hold circuit (7) taught by Peace does not detect a period of noise occurring in an input signal, does not pass the input signal for output when it is determined that there is no noise, and certainly does not hold the input signal in preparation for output during the period when noise is occurring.

Rather, the sample and hold circuit (7) disclosed by Peace, as is clearly explained in paragraphs [0085-0093] of Peace, provides the value of a maximum amplitude which is used to adjust an input signal.

While Applicant acknowledges recited features are to be construed in a reasonably broad manner, Applicant respectfully but forcefully submits that a person of ordinary skill in the art to which the claimed invention pertains would never consider a maximum amplitude value used to adjust an input signal with the input signal itself.

Put simply, Applicant respectfully submits that the sample and hold circuit (7) taught by Peace is completely, that is, structurally and functionally, different than the holding unit recited by Claim 1 and cannot and does not perform the same functions as the holding step recited by Claim 10.

Furthermore, Applicant notes Claim 1 also recites ***a synthetic unit for synthesizing a hold signal component of the signal output from the holding unit with an interpolation amount, the hold signal component being output in the hold state***; a predictor for performing a predictive operation on output signals of the synthetic unit to calculate predictive values approximate to the input signal; and an interpolation control unit for determining an amount of change of the predictive values as the interpolation amount, and stopping the synthetic unit from performing the synthesis of the interpolation amount when the predictive values are inappropriate with respect to

the hold signal component output in the hold state, ***and making the synthetic unit perform the synthesis of the interpolation amount when the predictive values are appropriate.***

Regarding Claim 1, Applicant further notes that the Office Action also admits that Niimi fails to teach or suggest a synthetic unit of synthesizing a hold signal component of the signal output from the holding unit with an interpolation amount, the hold signal component being output in the hold state.

Likewise, Claim 10 also recites ***a synthetic step of synthesizing a hold signal component of the signal output in the holding step with an interpolation amount, the hold signal component being output in the hold state***; a predictive step of performing a predictive operation on output signals generated in the synthetic step to calculate predictive values approximate to the input signal; and an interpolation control step of determining an amount of change of the predictive values as the interpolation amount, and stopping the synthesis of the interpolation amount in the synthetic step when the predictive values are inappropriate with respect to the hold signal component output in the hold state, ***and enabling the synthesis of the interpolation amount in the synthetic step when the predictive values are appropriate.***

Regarding Claim 10, Applicant further notes that the Office Action also admits that Niimi fails to teach or suggest a synthetic step of synthesizing a hold signal component of the signal output from the holding unit with an interpolation amount, the hold signal component being output in the hold state.

In an attempt to cure or otherwise address the admitted deficiencies of Niimi, the Office Action applies Peace.

The Applicant respectfully disagrees with the assertions made by the Office Action for the following reasons.

With respect to the synthetic unit and synthetic step recited by Claims 1 and 10, respectively, Applicant respectfully submits that Peace does not teach or suggest that which is recited by Claims 1 and 10.

Applicant has reviewed Peace in detail and is unable to locate any feature corresponding to the synthetic unit and/or the synthetic step recited by Claims 1 and 10, respectively. In fact, a review of the Office Action uncovers an admission that the primary reference, that is, Niimi, fails to disclose or suggest such features and then an assertion that Peace teaches such features. However, the Office Action does not identify what feature(s) taught by Peace supposedly corresponds to the recited features. In view of the above, Applicant respectfully submits that Peace, like Niimi, fails to teach or suggest that which is recited by Claim 1 and 10.

Moreover, Applicant respectfully submits that while the predictor (Claim 1) and predictive step (Claim 10) of the present invention performs a predictive operation on output signal of the synthetic unit (Claim 1) and synthetic step (Claim 10), Niimi's predicting means does not use the signal output for prediction but instead uses a digital input signal itself for use during the predictive operation. In other words, while the present invention uses an output signal, Niimi uses a digital input signal. Put simply, the present invention and Niimi use totally different signals during their respective predictive operations.

Furthermore, Applicant submits that the interpolation control unit (Claim 1) and interpolation control step (Claim 10) of the present invention stops the synthesis of the

interpolation amount performed by the synthetic unit (Claim 1) and synthetic step (Claim 10) when the predicted value is inadequate or inappropriate. A close reading of column 4, line 30 through column 6, line 5 of Niimi reveals that Niimi actually discloses a calculating means for the autocorrelation function and not an interpolation control means as asserted by the Office Action.

Honma merely teaches using an FM detection signal for signal noise suppression and does not cure or otherwise address the above-discussed deficiencies of Niimi and Peace.

Therefore, Applicant respectfully submits that Niimi, Peace, and Honma, alone or in any combination thereof fail to disclose or suggest each and every feature recited by Claims 1 and 10.

To establish *prima facie* obviousness, each and every feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03.

For the reasons provided above, Applicant respectfully submits that Niimi, Peace and Honma, alone or in any combination thereof, fail to disclose or suggest each and every feature recited by Claims 1 and 10. As such, Applicant respectfully submits Claims 1 and 10 are not rendered obvious in view of the applied art of record,

Therefore, Applicant respectfully submits Claims 1 and 10 should be deemed allowable.

Claims 2-9 depend from Claim 1. It is respectfully submitted that these claims be deemed allowable for at least the same reasons Claim 1 is allowable as well as for the additional subject matter recited therein.

As such, Applicant respectfully requests withdrawal of the rejections.

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding objection and rejections, allowance of the Claim 1-10, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 107156.00214.**

Respectfully submitted,
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